



# CASI TORONTO FLYER

NOVEMBER 2018, Volume 26 #2

## Toronto Branch Membership Newsletter

**THE FLYER WILL BE PUBLISHED ON A BI-MONTHLY BASIS UNTIL A NEW EDITOR VOLUNTEERS**

### NEWSLETTER LINKS

Click on any of the links below to move to other sections of the Newsletter

[Local News](#)  
[Industry News](#)  
[Academic News](#)  
[Museum News](#)

### UPCOMING CASI EVENTS

**NOTE: THERE IS NOW A \$5 CHARGE FOR NON-MEMBERS**

Keep an eye on our [Facebook](#) page for information about CASI Toronto Branch meetings.

Our next CASI Toronto Branch meeting will be on **SATURDAY, November 17**. Join us for a **tour of the Seneca College School of Aviation facilities** at their Peterborough Airport location. Space is limited so keep an eye out for the meeting notice and register early!

### CONTACT US

Get in touch with CASI Toronto Branch Executive with questions, comments or suggestions: [casitorontobranch@gmail.com](mailto:casitorontobranch@gmail.com) or on [Facebook](#) ("CASI Toronto").

Contact information for specific Executive members and additional event information is also available on the CASI website ([casi.ca/toronto](http://casi.ca/toronto)).

Our current Executives are:

*Chairman*  
Chris Hayball  
*Vice Chair & Flyer Editor*  
Gillian Clinton  
*Councillor*  
Alex Tsoulis  
*Treasurer*  
Bhavik Mody  
*Education Chair*  
Amir Masoud Tahvilian  
*Secretary*  
TBD  
*Member at Large*  
Fatemeh Mousavilar

### SPREAD THE WORD

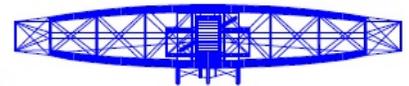
Help us to publicize our Toronto Branch meetings. Share your meeting notice with friends and colleagues, and post them around your school or workplace.

### YOUR NEWSLETTER

The CASI Toronto Flyer brings you local aerospace news. Suggestions and/or contributions are always welcome. If you've been to an interesting lecture or want to see coverage of an aerospace business in southern Ontario, let us know.

Contact the Editor at:  
[casitorontobranch@gmail.com](mailto:casitorontobranch@gmail.com)

### LOCAL NEWS



### CAHS Toronto Chapter

#### **Captain Les Evans (Ret'd)**

Capt. Evans will be talking about his military service career from 1974 - 2005 which included 10 years in the Navy and 20 years in the Air Warning Centre as well as seeing Gulf War service.

**Saturday, Nov. 3, 1:00 p.m.**

Armour Heights Officers' Mess  
Canadian Forces College  
215 Yonge Blvd.

Landing Fee: \$3.00 per person

More Info:

Bob Winson 416-745-1462  
[winsonrobert555@gmail.com](mailto:winsonrobert555@gmail.com)

## Aero Skills NE Regional Finals at the Ontario Science Centre

Our Chair, Chris Hayball, attended the Aircraft Technologies Group (ATG) Aero Skills Tournament in September and thoroughly enjoyed herself. She's looking forward to next year!

On Saturday, September 22nd, a first-time ATG Aero Skills event for the Toronto area was held at the Ontario Science Centre where the competition was a huge success and a very entertaining one. The four Aircraft Senior Level Journeyman technicians from the area squared off for the \$6,000 purse and an all expense paid trip to the Can-Am Nationals in Tucson, Arizona. The Aero Skills tournaments are now into the second year of competition across the U.S. and Canada.



There has never been so much playful banter between the technicians as they ribbed each other in comedic attempts to throw each other off their game. "I felt like I was back on the hangar floor. I think we need to give these guys microphones, so the audience can hear them, like a great comedy skit." chuckled Jay Logie, ATG Founder and developer of the event. Jay added, "A great big thank you to all those competitors that truly made the event something special".

We would also like to thank the Ontario Science Centre, as it was a great backdrop and a fabulous venue for this first Toronto event. The staff there were terrific and with the trial event a success, there was much interest to work towards next year's event and the opportunity to share with the public at large. Thank you to the good people at the Canadian Aeronautics & Space Institute (CASI) for the work they did in helping to promote the event.

The Top Gun for the fabrication and build round went to Allan Peckford, Second to Ryan Geddes, Third to Tahir Khan. The Overall Exhibition Award, for best total of four events, went to Allan Peckford, Second to Tahir Khan, third to Ryan Geddes

Over forty schools have competed over the past couple of years with many more schools and facilities providing feedback. Where the Local events at the trade schools and the Regional events across the country are set to an audience engaging competition with Individual Top Gun and Team Exhibition competitions, the National format is based ONLY upon the Top Gun Fab and Build project. This Championship had four time-based and quality rounds; fabrication, build (riveting parts together), disassembly (removing the rivets) and reassembly of the same parts. Special thanks to each competitor, school and industry partner as they truly are the ones who have been instrumental in bringing the whole idea to life!

AERO SKILLS is a competition based on industry processes and best practices, set in an audience environment so that students and the community at large have an opportunity to see technicians

demonstrating their skills, hear about the numerous career options the aerospace industry has to offer and to tour an aviation facility or school to see first-hand what a career in aviation is all about. For competitors it's not only competing with likeminded people, but it also quickly opens the door to the many employment opportunities that exist in the aerospace industry today.

ATG's Aviation NETWorX platform features a new autonomous, heuristic work force development program and CertTEC is a performance-based testing platform. Both are the industry sponsors for the Aero Skills Tour, and they would like to give a shout out to technicians who are taking on the challenge across the country. "Every one of these young techs (and of course the senior techs) made these events great and proved that it's a fun and unique experience for all, guaranteed." said a sponsor spokesperson.

ATG Aircraft Technologies Group specializes in providing work force support to the heavy maintenance industries and manufacturing through highly skilled technicians and teams, streamlining service, standardizing and targeting, and through fixed price programs.

For more about what ATG, NETWorX workforce development programs please visit: [www.myATG.aero](http://www.myATG.aero) and to learn more about the Aero Skills Tournament please visit: [www.myATG.aero/schools/tournaments](http://www.myATG.aero/schools/tournaments)

## **INDUSTRY NEWS**

### **BOMBARDIER**

the evolution of mobility

#### **Bombardier Global 5500 and Global 6500 Business Jet Program on Schedule for Delivery in 2019, with Flight Testing 70% Complete**

**TORONTO – October 15, 2018** – Bombardier is pleased to announce that the flight test program for the Global 5500 and Global 6500 aircraft is progressing on schedule, with 70 per cent of flight testing complete.

“The response to the Global 5500 and Global 6500 aircraft has been overwhelmingly positive since their unveiling at EBACE,” said David Coleal, President, Bombardier Business Aircraft. “The program is proceeding to schedule and these exceptional new long-range business jets are on track to enter service in 2019.”

Bombardier Business Aircraft revealed at the European Business Aviation Convention & Exhibition (EBACE) in May that it was growing its successful Global family with two long-range business jets, featuring a newly optimized wing and premiering exclusive Rolls-Royce Pearl engines. The Global 5500 and Global 6500 aircraft have more range, larger cabins and a smoother ride than competitors.

Flight testing for these new aircraft is progressing well, with 70 per cent of flight test hours completed at Bombardier’s world-class test centre in Wichita, Kansas, where both the Airbus A220 and the recently certified Global 7500 aircraft underwent flight testing.

Bombardier’s experienced flight test team reports that the Global 5500 and Global 6500 aircraft are performing exceptionally well throughout the rigorous flight testing program.

“The flight test team feels privileged to execute another program for such superior aircraft,” said Tom Bisges, Vice President, Bombardier Flight Test Centre and Flight Operations. “The Global 5500 and 6500 aircraft flight test program is proceeding smoothly, and we find that our extensive experience testing the Global 7500 aircraft, as well as the quality of these newest aircraft, allow us to continue to execute on schedule.”

Aerodynamic validation of the aircraft’s newly optimized wing, which was re-profiled to further refine Bombardier’s signature smooth ride, is now complete. The Rolls-Royce Pearl engine, the most advanced in business aviation, is delivering on the unmatched total performance that sets these aircraft apart.

Interior completions of the first customer aircraft are set to begin this year at Bombardier’s state-of-the-art completion facilities. The Global 5500 and Global 6500 aircraft will enter service with stunning new cabins, featuring the patented Nuage seat, engineered for maximum comfort on long flights, and debuting the industry-first Nuage chaise in the conference suite. Ultra-fast connectivity combined with the industry’s first 4K, ultra-high-resolution system will maximize productivity and comfort on flights short or long, and customers will have safe access to baggage at all times.

Bombardier’s advanced Vision flight deck on the Global 5500 and Global 6500 aircraft introduces the first true combined vision system

(CVS) in business aviation – the only system to seamlessly merge enhanced and synthetic images in a single view.

The Global 5500 and Global 6500 aircraft have class-leading ranges of 5,700 and 6,600 nautical miles, respectively, with top speeds of Mach 0.90 and Bombardier’s smooth ride technology. The Global 5500 aircraft can connect New York to Cairo, and Miami to Moscow; the Global 6500 aircraft can connect New York to Beijing, and Miami to Istanbul.

These aircraft have highly favorable operating costs versus smaller competing aircraft with less range, and also deliver a range increase of up to 1,300 nautical miles when operating out of hot-weather and high-altitude conditions, thanks to increased thrust and improved fuel efficiency. They also boast superior agility, with the ability to access airports that others can’t, such as London City.

Global aircraft offer greater peace of mind for customers, with an abundance of electrical power – four variable frequency generators and an auxiliary power unit – that far exceeds that of other business jets in their class.

#### **Global 7500 Aircraft, Industry’s Longest Range Business Jet, Awarded Transport Canada Type Certification**

**TORONTO – September 28, 2018** – Bombardier Business Aircraft announced today that its flagship Global 7500 aircraft, the largest, most luxurious and longest range business jet ever built, has been awarded Transport Canada Type Certification, paving the way for entry-into-service this year. Certification by the Federal

Aviation Administration (FAA) and the European Aviation Safety Agency (EASA) is expected to follow shortly.



*Global 7500 aircraft Type Certificate ceremony*

“The certification of our clean-sheet Global 7500 business jet is a defining moment for Bombardier, for our employees and for the industry, as we approach entry-into-service,” said David Coleal, President, Bombardier Business Aircraft. “Thanks to the rigour and innovation of our design and test program, the Global 7500 aircraft has succeeded in elevating every standard by which a business jet is measured – comfort, luxury, performance and a smooth ride. At entry-into-service, this aircraft will meet the latest and all of the most stringent certification requirements and is set to redefine international business jet travel. We couldn’t be more proud of this achievement.”

"Canadian aerospace products have a well-deserved global reputation for quality, value and reliability. The certification of the Bombardier Global 7500 aircraft is a significant accomplishment that will create good quality jobs for Canadians and support the continued growth of the local and regional economies where these aircraft are built," said the Honourable Marc Garneau, Canada’s Minister of Transport.

The Global 7500 aircraft has accumulated more than 2,700

flight hours since the flight testing program began in November 2016.

“The performance and functionality of this class-defining aircraft is a testament to the unique expertise and dedication of our highly skilled product development team,” said François Caza, Vice President, Product Development and Chief Engineer, Product Development Engineering, Aerospace, Bombardier Inc. “During the certification process the team successfully validated all customer and regulatory requirements to yield a highly integrated, state-of-the-art aircraft with the highest level of safety that meets or exceeds the needs of our clients.”

“Thanks to Bombardier’s latest advancements in airframe and wing design, the Global 7500 aircraft exceeded its original takeoff and landing performance commitments, leading to a new published takeoff distance of 5,800 feet,” said Michel Ouellette, Senior Vice President, Global 7500 and Global 8000 Program, Bombardier Business Aircraft. “This improved takeoff performance distance is almost 500 feet shorter than the closest – and smaller – competitor aircraft, and enables the Global 7500 business jet to operate out of airports with shorter runways — all while offering Bombardier’s signature smooth ride.”

The Global 7500 aircraft boasts an unmatched range of 7,700 nautical miles, a full 300 nautical miles further than initial commitments, and it is the only business aircraft that can connect New York to Hong Kong, and Singapore to San Francisco, nonstop.\*

With its four true living spaces, the Global 7500 aircraft is unique among business jets in spaciousness, luxurious comfort and design flexibility. Its

leading-edge cabin entertainment system, coupled with ultra-fast connection speeds via Ka-band, allows passengers to stream high-definition content and enjoy an exceptional entertainment experience. Another breakthrough innovation on the Global 7500 jet is the revolutionary nice Touch cabin management system (CMS). The nice Touch CMS introduces a new way to connect with the Global 7500 aircraft cabin through the Bombardier Touch dial, featuring business aviation’s first application of an OLED display.

The Global 7500 aircraft also features the patented Nuage seat, exclusive to the new Global aircraft family and meticulously designed for maximum comfort. Finally, the modern and multi-functional kitchen on the Global 7500 business jet features unprecedented storage space and offers an exceptional dining experience.

Setting the benchmark for the most exceptional business jet experience, these state-of-the-art features and the aircraft’s sophisticated styling contributed to the Global 7500 jet receiving a 2018 Red Dot Award for Product Design, one of the most sought-after honours for design and innovation excellence worldwide.



## CAE Releases its First Business Jet Pilot Demand Outlook: 50,000 New Business Jet Pilots Required over the Next 10 Years

**October 16, 2018** – CAE released today at the 2018 National Business Aviation Association (NBAA) convention and exhibition its 2018 CAE Airline and Business Jet Pilot Demand Outlook. This is an update to last year's report, which provides, for the first time, a business jet pilot demand forecast. The renewed 10-year view offers fleet operators key insights on the future need for professional pilots in both business and commercial aviation, building on the markets' key drivers, variables and trends.

The report demonstrates that the active business jet pilot population will reach 65,000 by 2028, which represents an increase of 18%, with a turnover rate of almost 100%. More specifically, 10,000 new business jet pilots will be required to sustain growth and 40,000 new business jet pilots will be needed to support retirement attrition across the segment over the next decade.

"The CAE Airline and Business Jet Pilot Demand is a one-of-a kind report. Our 2018 update builds on last year's analysis while introducing for the first time a business jet pilot forecast and shedding light on ways the aviation industry can cope with this demand," said Marc Parent, CAE's

President and Chief Executive Officer. "Today's soaring pilot demand is a reality that we must all face. As the leading training organization in the world, we are honoured to offer our partners the training solutions they need to face this rising demand."

The 2018 CAE Airline and Business Jet Pilot Demand Outlook is available for download at [www.cae.com/civil-aviation](http://www.cae.com/civil-aviation).



## Strengthening Canada's Leadership in AI-driven Robotics to Support Jobs

*New lunar rover concept contracts awarded to MDA and Canadensys Aerospace Corporation*

**October 15, 2018** – The Canadian Space Agency (CSA) is positioning Canada's space community to maintain its global leadership in space robotics. Accordingly, the CSA announced today that it is investing \$1.6 million in two concepts for lunar rovers that would use artificial intelligence to make their own decisions. Canadian businesses MDA, a Maxar company, and Canadensys Aerospace Corporation have each been awarded a contract worth \$800 000 to develop an innovative concept for the CSA.

The CSA made the announcement at the start of a three-day event to promote Canadian space capabilities to major space companies, including Blue Origin, Airbus Defense and Space and Moon Express. As part of ongoing discussions with the international space community to prepare options for Canada's participation in the next chapter of space exploration, the CSA recently signed a Memorandum of Understanding with Moon Express, a US-based company. This agreement will enable Canadian firms and researchers to offer Moon Express their expertise and capabilities. The CSA will also explore the potential of using the company's lunar lander service for the delivery of future Canadian payloads.

These activities will foster the growth and innovation of Canadian businesses in our modern economy and increase opportunities for them to export their technologies and services.

### Quotes

"Canada's space sector not only inspires Canadians to reach for the stars, it has for a long time been at the forefront of Canadian science, technology and innovation. With these investments, our government is supporting a key sector of our economy that creates good jobs and will continue to propel Canada's innovation economy to new heights."

~ *The Honourable Navdeep Bains, Minister of Innovation, Science and Economic Development*

### Quick Facts

- The contracts awarded to MDA and Canadensys Aerospace will support 61 well-paying jobs and position Canada to play an important role in future missions to the Moon with international

partners.

- A lunar rover would be crucial for scientific research: it would collect lunar samples for return to Earth and test technology required for a future pressurized rover able to transport astronauts on the Moon's surface.
- The ability to make decisions using artificial intelligence represents a new chapter in planetary rover technology: the rover would be able to assess its immediate environment, analyze risks, and autonomously plan its trajectory to meet objectives. Rovers with autonomous decision-making abilities will be able to accomplish a greater number of science objectives more efficiently.



### **Kepler Raises \$16M to Deliver Nanosatellite Data Services in Low Earth Orbit and Grow Global Reach**

**TORONTO – October 15, 2018** – Kepler Communications, a Canadian satellite telecommunications company with a mission of providing in-space connectivity services, today announced that it has raised \$16M USD in a Series A round of financing led by Costanoa Ventures, with participation by Deutsche Bahn's (DB) Digital Ventures as a strategic investor. The round also included a number of returning investors, such as IA Ventures who led their Series Seed. This brings the cumulative

total raised to over \$21M USD.

Rather than pursue the more typical approach of launching a massive constellation prior to delivering customer services, Kepler already delivers services for customers operating in the poles who are currently completely devoid of connectivity options. Despite being the size of a breadbox, their first satellite KIPP, a 3U CubeSat, delivers upwards of 40 Mbps to 60cm diameter VSAT (Very Small Aperture Terminal) antennas for their customers where the bulk of alternative satellite services peak around 1 Mbps. This is an improvement similar to the jump from 3G to 4G data speeds. KIPP will soon be joined on orbit by its sister satellite, CASE, when the latter is launched from the Satish Dhawan Space Centre on India's Polar Satellite Launch Vehicle (PSLV) in mid-November 2018.

"We've spoken with icebreakers, oil tankers, tourism companies, maritime operators, and scientific organizations that all operate at the poles. They told us of the frustrations with the complete lack of high-bandwidth coverage in these regions. This is what led us to roll out PolarConnect™, the world's only high bandwidth solution designed for the poles," stated Mina Mitry, CEO of Kepler.

Demand for connectivity at the poles is poised to increase, as tourism activities flourish and ice-covered shipping lanes melt as a result of global warming. One of Kepler's early customers is F. Laeisz, one of the world's oldest shipping companies that operates an icebreaking vessel, the Polarstern, which can support over 100 crew members and spends the majority of its operational lifetime outside of traditional satellite coverage.

Thomas Liebe, chief operator of the Polarstern, says "With the Kepler system, for the first time we are able to send massive files like operational data, scientific data, videos, or photos. These are bandwidth intensive and we have no other way to send the data if we used traditional systems." Kepler's store-and-forward service is designed to work with a wide variety of VSATs, meaning that customers with existing Ku-band steerable antennas will be able to make use of the service without the need to install new ground antenna.

"We are uniquely excited by Kepler as compared with all the recent nanosatellite communication companies because they have demonstrated that their satellites are filling global gaps in connectivity," said Greg Sands, Founder and Managing Partner of Costanoa Ventures. "Kepler has incredible technology, with KIPP having already demonstrated the highest data throughput ever achieved in a nanosatellite. They have strong customer traction, with early polar customers already making use of PolarConnect™." Sands will also join Kepler's board.

After KIPP and CASE, Kepler is planning to deploy its third satellite TARS in H2 2019 that will be used to demonstrate their Internet of Things (IoT) connectivity service. The focus on IoT connectivity led to the strategic investment by DB Digital Ventures, who has a need for IoT connectivity amongst their business units. Boris Kühn, Managing Director at DB Digital Ventures, says "We are excited about the novel connectivity solutions that Kepler is bringing to market, and look forward to implementing their service within our business units at DB. Kepler represents a market leader for connectivity when compared to

other nanosatellite connectivity options we've explored."

Kepler will be using the new capital to grow revenues, and to launch its GEN1 constellation, which will be put into service by the end of 2020 and includes up to 15 additional nanosatellites. The focus of their GEN1 constellation will be on delivering their high-capacity and affordable store-and-forward services beyond the capabilities offered by KIPP, CASE, and TARS.

Everything Kepler does is with an eye towards their ultimate goal of in-space connectivity, and Kepler is intent on doing this sustainably. GEN1 and GEN2 constellations predominantly focus on store-and-forward and IoT services, but will have the necessary technology to lead to in-space connectivity. Kepler's accomplishments are a testament to the core strength of being able to build, launch, and operate highly capable communication satellites quickly. A principal desire for Kepler is to continue to build new and strengthen existing relationships in the space industry, taking advantage of Kepler's core competency, to be able to reach their goal of in-space connectivity collaboratively.



### **Magellan Aerospace Completes Delivery of Satellite Hardware for the RADARSAT Constellation Mission**

**TORONTO – October 17, 2018** -- Magellan Aerospace Corporation announced today the completion of all hardware deliveries to MDA, a Maxar Technologies company, for the RADARSAT Constellation Mission (RCM) being built for the Canadian Space Agency. In late September, the Multi-Layered Insulation (MLI) blankets were installed on the final satellite bus, marking the completion of this major contractual milestone. These thermal blankets for the spacecraft prevent it from freezing while in space.

Over the course of the RCM program Magellan has delivered three satellite buses, three payload module structures, as well as associated software, ground support equipment, and launch vehicle adaptors to MDA. Magellan is under contract by MDA to manufacture these assemblies for the Canadian Space Agency's RCM program, a three-satellite constellation that will provide around-the-clock C-band synthetic aperture radar data to support maritime surveillance, disaster management, and ecosystem monitoring for Canada and its surrounding Arctic, Pacific, and Atlantic maritime areas.

Magellan's continuing participation in the RADARSAT Constellation Mission contract with MDA includes the support and review of the results of the spacecraft environmental tests, support for mission operations, and support during the launch and on-orbit

commissioning of the spacecraft.

The three RCM buses manufactured by Magellan are the largest and most complex satellite buses that the company has designed and manufactured to date. As an additional advancement, Magellan developed a new power control unit for use on the RADARSAT Constellation Mission that has already been commercialized and sold for another mission for an undisclosed customer.

The three satellites will be deployed on a single launch that is scheduled for the week of February 18 2019.



### **Maxar Technologies' MDA Announces New LaunchPad Program to Benefit Technology and Innovation in Canada**

**BRAMPTON, ON – October 19, 2018** – MDA, a Maxar Technologies company, today announced the company's LaunchPad program, which will serve as an entry point for innovative small and medium-sized Canadian companies and academic research groups seeking to collaborate with MDA on technology or innovation projects. MDA LaunchPad will create partnerships that build and grow Canadian businesses in the fast-paced space and defence industries.

Small and Medium-Sized Enterprises (SMEs) and academic research groups can contact the MDA LaunchPad team to:

- Explore potential collaboration regarding the development of world-class technology
- Bring new products or business opportunities together
- Jointly enter a new market
- Collaborate on research and development ideas that are of mutual interest
- Collaboration on other types of projects

"A crucial aspect of creating growth is widening the arc of the very market you serve—creating a larger, more collaborative economic sector with an array of industrial participants that enable one another," said Mike Greenley, group president of MDA. "As a market leader, MDA has the unique opportunity to provide a powerful engine to fuel economic growth. Partnering with other companies, particularly, highly innovative SMEs, as well as academia, MDA provides essentially a "business incubator" to support the global environment of rapid technological advances that require flexible and innovative responses to emerging market opportunities. Allowing greater financial self-sufficiency, structure and services for SMEs within the new space economy and the associated technology spin offs helps build a better world."

"I am also delighted to announce MDA's LaunchPad during Small Business Week. The Government of Canada and Small Business and Export Promotion Minister Mary Ng are committed to making it as easy as possible for Canadian small businesses to succeed, and we at MDA are proud to add our expertise and voice to that goal," added Greenley.

The Government of Canada expects MDA, as the country's anchor space company and one of

the leading defence companies, to lead—which means reaching out across the Canadian industrial base to enable all of Canada's industrial sector to both shape and enable each other. MDA plans to leverage the powerful combination of the four industry-leading companies that comprise Maxar Technologies to provide a platform of convergence and access to expanded networks to support MDA LaunchPad.

Learn more at [www.mdacorporation.com/launchpad](http://www.mdacorporation.com/launchpad).



### Porter Airlines Turns 12

**TORONTO – October 23, 2018** – It has been a dozen years since Porter Airlines introduced a distinct aviation concept to travellers. Emphasizing refined service offerings, including complimentary in-flight amenities, and developing its main base at the uniquely-located Billy Bishop Toronto City Airport, Porter has created a sophisticated brand appealing to a range of business and leisure flyers.

In the last year, the airline invested in people and infrastructure aimed at supporting its ongoing mission to provide competitive and affordable travel options.

This includes a new aircraft maintenance base in Sudbury to perform rotating overnight work on Porter's fleet of 29 Bombardier Q400s. In Thunder Bay, Porter opened the first crew base for

pilots and flight attendants in Northern Ontario among large commercially-schedule airlines. These crewmembers begin and end their flying schedules in Thunder Bay, providing additional resources in support of local flights. Approximately 40 well-paying jobs have been introduced to date across both communities through these investments.

"Porter has developed a loyal following based on our willingness to do things differently," said Robert Deluce, president and CEO of Porter Airlines. "I want to recognize our entire team for contributing to a culture that values passion, perseverance and treating people with respect. This is what attracts customers and creates bonds among our team."

Partners at Billy Bishop Airport are making their own investments to improve the customer experience. PortsToronto, the airport's owner and operator, completed a multi-year airfield modernization program, including a resurfaced main runway and updated infrastructure. Nieuport Aviation, the airport terminal operator, recently upgraded the passenger lounges by adding more space, seating and a range of restaurant and retail locations. These improvements, seen and unseen by passengers, introduce new levels of efficiency and service to the airport.

Porter flies to regional locations in eastern Canada and the U.S., including high-frequency business routes between Toronto and Ottawa, Montreal and New York, plus appealing leisure markets in Florida, South Carolina and Quebec. Its vacations division, Porter Escapes, offers travel packages across its route map with accommodations and attractions.

## ACADEMIC NEWS

# CENTENNIAL COLLEGE

### Seasoned Aviator Provides a Major Gift to Centennial

**TORONTO – September 24, 2018**

– Centennial College supporter H. Bruce MacRitchie, whose Aviation Technician Scholarship is named in memory of his late brother Douglas, has furnished a major new gift to the college – the largest by a private individual to date – amounting to more than \$1 million worth of small aircraft, engines, equipment and funds.



"Aviation has been very good to me. I own half a dozen airplanes myself, and my stepson graduated from Centennial's Aviation Technician program and went on to have a great career with Air Canada," says MacRitchie.

Still spry at age 84, MacRitchie has long been associated with Canada's aviation industry. While working for an electric motor manufacturer in 1955, he enrolled with Central Airways in Toronto to earn his private pilot licence. In 1962, he joined forces with a colleague to form Carldon Aviation, which sold Cessna light aircraft.

By 1968 MacRitchie had obtained his commercial pilot licence and the AME Transport Canada licence

as an aircraft technician. He left the aircraft dealership to join Fleet Industries in Fort Erie, where he was employed in a marketing role to fly and demonstrate a fibreglass float plane.

Fleet was growing as an aerospace component supplier, which meant relocating a company representative to the epicentre of the booming aircraft industry in California. MacRitchie was named Fleet's rep on the Lockheed L1011 airliner program.

"I was also working with Douglas Aircraft in Long Beach because Fleet was producing the DC-9 MD80 flaps and ailerons for Douglas Canada. While I was there I trained at the Hughes School and received my commercial USA Helicopter endorsement."

Returning to Canada in 1970, MacRitchie resumed his marketing role at Fleet, working with all the major aircraft manufacturers including Boeing, Grumman, Sikorsky, Douglas and others.

"We had displays at several of the big industry shows at Paris and Farnborough, working with prime aircraft companies in North America, Europe, Japan and Israel," says MacRitchie, who once flew a de Havilland Twin Otter plane across the ocean with corporate pilot Tom Appleton.

As a change of pace, he started an aviation company out of Welland Airport, which functioned as a flight school, charter and full maintenance facility. MacRitchie also found time to volunteer as director of the Canadian Warplane Heritage Museum.



*Bruce MacRitchie standing beside one of his airplanes*

"Our volunteer group, headed by me, restored and donated several aircraft, including the Fleet Fort and Cornell aircraft, which were produced by Fleet during the Second World War." He believes the war effort helped to establish Canada as an industrialized nation.

"When war became inevitable, Canada agreed to be the home of the Commonwealth's pilot training programs because of its safe distance from the war theatre in Europe," says MacRitchie. "More than 100 airports were built across Canada as part of the preparations."

The Canadian headquarters of de Havilland Aircraft of the United Kingdom was established at Downsview airfield just north of Toronto, whose brick buildings and hangars housed an assembly facility for the Moth training plane and the famous plywood Mosquito bomber.

Today the long-dormant facility is undergoing restoration and expansion to become Centennial College's fifth campus, thanks to generous funding from the Ontario and federal governments. The Centre for Aerospace and Aviation will be the new home of Centennial's aerospace faculty, aircraft and related equipment relocated from Ashtonbee Campus in January 2019.

MacRitchie is energized by the transformation unfolding on Downsview's hallowed ground. As he points out, aviation is

inextricably tied to Canada's history – airplanes helped open up the far north to economic activity, including mining and forestry. Now he can witness a chapter of Canada's aviation history restored to its former glory.

"I became involved with Centennial after my brother Douglas was killed in an accident when he was flying his own aircraft to work with me on the Cornell restoration project. That led me to establish a student scholarship in his name at Centennial in 2003." With that selfless gesture, MacRitchie was introduced to the community of learners at Ontario's first college.

"I've met many nice, young people in the college's program, and I've often thought, how can I help them further?" he says. This time, Bruce MacRitchie doubled down on his commitment with a record gift to the college.

"This gift represents a better return on my investment," he smiles.

# Seneca

## Jazz Further Supports Seneca with Flight Instructor Bursary Program

**PETERBOROUGH, ON – October 24, 2018** – Jazz Aviation is pleased to announce a further commitment to Canada's future professional pilots with an enhanced agreement between the airline's Jazz Aviation Pathway Program (Jazz APP) and Seneca's School of Aviation. The enhanced agreement includes the introduction of a flight instructor bursary, a commitment from Jazz to contribute up to \$16,000 annually to assist Seneca graduates in becoming flight

instructors.

"We are happy to further encourage and support Seneca graduates in their pursuit of becoming flight instructors," said Steven Linthwaite, Vice President, Flight Operations, Jazz. "We are committed to cultivating a strong future for the pilot profession and by creating this bursary program, we are building on our strong relationship with Seneca to better support the industry and the ever-growing need for flight instructors."

As a part of this enhanced agreement, Jazz will offer a bursary of up to \$4,000 annually to a maximum of four third-year Honours Bachelor of Aviation Technology students who have been identified by Seneca as candidates to become Flight Instructors at the institution following graduation.

"This bursary opportunity from Jazz will encourage and enable more Seneca Aviation graduates to become Flight Instructors," explained Lynne McMullen, Director of Business Development, Seneca School of Aviation. "We are grateful for our continued partnership with Jazz and the attractive and valuable career opportunities this longstanding relationship provides both our students and instructors."

The new flight instructor bursary builds upon the existing Flight Instructor pathway agreement between Jazz and Seneca, introduced in 2016. The pathway provides Seneca's top-flight instructors with an opportunity for employment as a professional pilot with Jazz.

For the past 11 years, Jazz has been actively involved in shaping the curriculum and training of Canada's future professional pilots through active engagement with

aviation colleges and universities. In 2015, Jazz rebranded these efforts under the Jazz Aviation Pathway Program banner. To date, Jazz has announced agreements between the Jazz APP and 18 institutions and organizations.



## A Front-row Seat to Space: U of T Alumna Earns Elite Designation by CSA/NASA to Control Space Robotics Missions

**TORONTO – October 26, 2018** – When Canadian astronaut David Saint-Jacques is on the International Space Station this winter, Canadian space roboticist Kristen Faccioli will likely be at the controls.



The alumna of University of Toronto's Faculty of Applied Science & Engineering has just become the 14th Canadian to earn a CSA/NASA robotics flight controller certification, putting her in charge of timeline management, procedure development, and overall situational awareness for the robotics systems onboard the space station during real-time operations.

"Of the 14 Canadian flight controllers, five of us are U of T Engineering grads, which I think is

amazing,” says Facciol. “What was really cool to me was that we now have 14 Canadian astronauts and 14 Canadian flight controllers, so that similarity just shows you what an honour it is to be a part of this group.”

Facciol is an operations engineer with the Canadian Space Agency’s Mission Control Group and is stationed at NASA’s Johnson Space Center in Houston, Texas. Next year she will return to the CSA to support operations from the control centre in Saint-Hubert, Que. She launched her career with MDA (now Maxar Technologies), the company that designed and built the world-famous Canadarm, which provided the initial opportunity to work with the CSA.

“That was when I learned about the flight controller position,” she recalls. “It was the first time I realized there were actually Canadians controlling Canadian hardware in a Canadian facility, and that was completely surreal. And then I set my eyes on that career goal.”

The certification is the culmination of a year-long training process, involving self-study, classes within the robotics group and with other NASA teams, “knowledge review” sessions that resemble a verbal thesis defence, and ultimately, a series of six to 10 simulations of varying complexity. Facciol’s final simulation was a spacewalk with a crewmember on the end of the Canadarm2, in which she had to effectively work with other teams to negotiate and resolve a series of failures or anomalies introduced into the scenario in real time.

The intense experience demands a balance of strong technical knowledge and what NASA calls the seven foundations of flight operations: competence, confidence, discipline,

responsibility, teamwork, toughness and vigilance. It’s a combination for which Facciol says her education in engineering science prepared her well.

“It really teaches you to work in a multidisciplinary environment, to work with people from different backgrounds and different strengths, and to be able to manage an overwhelming number of things,” she says. “I couldn’t have done it without U of T Engineering as a background.”

In addition to acting in her new role as mobile servicing system-task officer for the upcoming spacewalk Saint-Jacques will support, Facciol has been assigned to three other missions scheduled for fall 2018 and winter 2019: receiving a new set of batteries from a Japanese cargo vehicle for installation on the space station, designing the procedures for a robotics refuelling mission demonstration, and supporting a SpaceX commercial resupply mission with their Dragon vehicle.

For Facciol, having a front-row seat to space is awe-inspiring. “To walk through buildings and cross paths with astronauts and people who have had such a huge influence on human spaceflight...it’s almost like this dream world that you knew existed but never thought you could be a part of.

“I still pinch myself every day.”

*By Marit Mitchell*



## **UTIAS Researchers Launch Drone Outreach Program in Thunder Bay**

**TORONTO – October 10, 2018 –**

This spring, a team of researchers from the University of Toronto Institute for Aerospace Studies (UTIAS) partnered with Dennis Franklin Cromarty High School (DFC), a high school in Thunder Bay, Ont. serving Indigenous students from communities in northern Ontario. The researchers delivered a series of online and in-class workshops aimed at teaching Grade 10 science students how to build a quadrotor drone.

The initiative was spearheaded by professors Craig Steeves and Jonathan Kelly (both UTIAS) and included graduate students Rikky Duivenvoorden (EngSci 1T3 + PEY, MSc UTIAS 1T6), Chris McKinnon (EngSci 1T3, MSc UTIAS 1T5, PhD candidate), Bharat Bhaga (UTIAS PhD candidate) and Suraj Bansal (UTIAS PhD candidate). The program was made possible by support from the Dean’s Strategic Fund for the Centre for Aerial Robotics Research and Education (CARRE).

“The CARRE funding enabled us to develop a program where Indigenous high school students would get some exposure to the technology of drones—ideally, to understand what the drones can do, what they can’t do and how they are designed and constructed,” said Steeves.

Sharon Angeconeb, the school's principal, and Matt Kaskiw, the school's Grade 10 science teacher, were supporters of the program and keen to get it off the ground as early as possible.

"This was huge for us in terms of technology — it's something lacking up north. To have professors from U of T spend time with the students was truly amazing. I can't put it into words," says Principal Angeconeb. "Assembling a drone sparked the interest of the students and was something they could learn more about and teach their younger siblings. It also expanded their opportunities for post-secondary education."

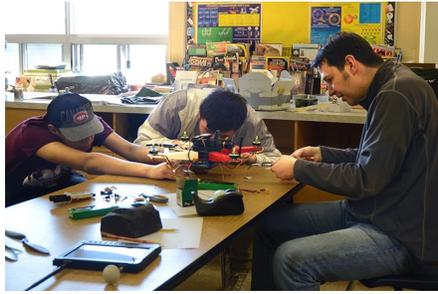
Through weekly online workshops, Steeves and his team taught the students the technical background and steps to designing a drone. This included selecting propellers, batteries, motors and an autopilot, and designing some of the drone structure.

In keeping with the philosophy of the school's namesake, Dennis Franklin Cromarty, the program offered an opportunity for the students to learn new skills that they could bring back to their northern communities.

"If you look longer term, you can imagine that drones are likely to be used more often in remote northern areas of Canada for monitoring things like resources, wildfires or wildlife, for search and rescue, or for delivery of small packages, like medicines," said Steeves. "With an understanding of how drones are built and operated, the students will be better placed to ensure that drones are used to the benefit of their communities."

In early April 2018, the UTIAS team travelled to Thunder Bay to build the first drone. The students

built a drone using the parts they selected and conducted a flight test at the basketball court behind the school.



*Professor Craig Steeves (UTIAS), right, assembles a quadrotor drone with Grade 10 students at Dennis Franklin Cromarty High School in Thunder Bay. (Photo: Rikky Duivenvoorden)*

"The most rewarding part of the program was working with the students to build the drone and to finally see it fly above the basketball court with their help," said Duivenvoorden.

After dedicating many hours to working on the drone, the students and their science teacher, Matt Kaskiw, were also excited to see their work come to life.

"This was an awesome collaboration and something the students and I wouldn't usually have an opportunity to work on," says Kaskiw. "I was really happy to get such positive feedback from the students, and it was a very rewarding experience, especially since the program has an application up north."

It wasn't all smooth flying for the UTIAS team — and the instructors learned as much as they taught, said McKinnon. The students also inspired the researchers' approach their future work.

"Working with the students taught me how to effectively convey complex ideas in a way that's relatable to their own real-world experiences," says Bansal. "This will definitely prove to be a

valuable lesson for me in the future whether I'm training new students in the lab, collaborating with undergraduate students or presenting at conferences."

Bhaga also found a direct connection between preparing lectures for the students and completing his PhD thesis.

"This experience taught me the importance of simplifying complicated concepts for audiences outside academia," says Bhaga. "For my thesis, I spend a lot of time making diagrams so something is easier to understand, and I've gone back and revised some of these diagrams after working with the students."

Steeves hopes to expand the program to other Indigenous high schools in Ontario. He also has plans to invite the students and their teacher to Toronto to take them on a tour of the leading-edge aerospace engineering facilities at UTIAS.

Steeves is also excited to be working on a special project to bring back to the school.

"Early in the planning stages, I asked Principal Angeconeb what sort of thing she would like to see come out of the program. The first thing she said was a birch bark drone," said Steeves. "One of the projects I'm working on is how to make a birch bark composite."

## MUSEUM NEWS

### CANADIAN WARPLANE HERITAGE



[www.warplane.com](http://www.warplane.com)



### Remembrance Day

**November 11, 2018**

10:30 am - 12 noon - ARRIVE EARLY - Limited seating

Join us for this day of remembrance at the Canadian Warplane Heritage Museum where we will be honouring those who served our country with a special indoor Remembrance Day service. Our service will also recognize the valiant men and women of today's Canadian Forces who build upon the honoured, sacred legacy of our fallen heroes. Accomplished Canadian author, journalist and broadcaster Ted Barris returns once again as our guest speaker.

The Museum offers seating for several thousand with limited standing room, so it is best to arrive early. Weather permitting, Museum aircraft will perform a flypast for the service.

The service will also be broadcast live on CHCH-TV.

Parking and admission are free but donations to the Museum to help us remember them are greatly appreciated.

Donations of non perishable food are also being accepted for the Hamilton Food Share.

### The Monuments Men: On the Front Line to Save Europe's Art 1942-1946



**On until November 18, 2018**

The Canadian Warplane Heritage Museum is pleased to display this exciting new exhibition, on loan from the Smithsonian Archives of American Art - *The Monuments Men: On the Front Line to Save Europe's Art 1942-1946*.

During World War II, an unlikely team of soldiers was charged with identifying and protecting European cultural sites, monuments, and buildings from Allied bombing. Officially named the Monuments, Fine Arts, and Archives (MFAA) Section, this US Army unit included art curators, scholars, architects, librarians, and archivists from the US and Britain. They quickly became known as The Monuments Men.

Towards the end of the war, their mission changed to one of locating and recovering works of art that had been looted by the Nazis. The Monuments Men uncovered troves of stolen art hidden across Germany and Austria, some in castles, others in salt mines. They rescued some of history's greatest works of art.

## NATIONAL AIR FORCE MUSEUM OF CANADA



[airforcemuseum.ca](http://airforcemuseum.ca)

*Nothing new to report.*

## TORONTO INTERNATIONAL AEROSPACE

[formerly Canadian Air & Space Museum]

[www.casmuseum.org](http://www.casmuseum.org)

### The Former CDN Air and Space Museum Avro Arrow Replica is Still Sitting in a Parking Lot at Pearson Airport

from [The Commercial Space Blog](#) by Chuck Black



Summer 2018 photo of the replica CF-105 Avro Arrow owned by the museum. Portions of the plastic covering protecting the model have fallen off to expose the model to the elements. Photo c/o Sameer Haqqi.

**TORONTO – October 29, 2018 –** There are very few organizations with worse luck than the ill-fated Canadian Air and Space Museum,

a Downsview ON based charity now known as the Toronto International Aerospace Museum because of a spat it got into with the Ottawa ON based Canadian Aviation and Space Museum (CASM), an organization with a very similar sounding name, but better funding.

It operated out of the historic de Havilland Canada aircraft manufacturing building from 1999 until 2011, when the museum was evicted by the landlord, the Federal Crown Corporation known as Park Downview Park (PDP) for a variety of reasons which, even today, seem contradictory and confusing.

Since then, the organization has been struggling to find a new home for the museum exhibits, which were originally stored in twenty-one rented trailers at the Toronto ON based Pearson International Airport and at several other locations around the city.

Recent events, including the relocation of the rented trailers to a "secure facility" in Caledon ON, along with an August 21st, 2018 #GoFundMe campaign under the headline "Preserving CF-105 Arrow replica" organized by "volunteers and members of now-defunct Toronto Air and Space Museum/ Canadian Air and Space Museum" suggest that the string of bad luck has continued.

Click here [for the rest of the story.](#)

## LOCAL CASI CORPORATE PARTNERS

